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Mark D. Simpson
Synnestvedt & Lechner
2600 Aramark Tower
1101 Market Street
Philadelphia, PA 19107-2950

EXAMINER

WEST, JEFFREY R

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/931,308
Filing Date: August 16, 2001
Appellant(s): MERICAS, ALEXANDER E.

Mark D. Simpson
For Appellant

EXAMINER'S ANSWER

This is in response to the Appeal Brief filed 05 December 2005, appealing from the
Office action mailed 24 September 2004.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The Examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The Appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The Appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,557,548	GOVER et al.	9-1996
2002/0026524	DHARAP	2-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 4, 5, 8, 9, 11-14, 16 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,557,548 to Gover et al. in view of U.S. Patent Application Publication No. 2002/0026524 to Dharap.

Gover discloses a method for monitoring the occurrences of one or more events related to the operation of a processor (column 2, lines 1-3), the processor including a performance monitor having a plurality of counting elements (column 2, lines 4-7), the method comprising the steps of identifying the number of events to be counted by the performance monitor (column 3, lines 20-25 and column 4, lines 38-44), identifying the number of counting elements available to count incidents of the events (column 3, lines 26-31 and column 44-54), and assigning at least two of the counting elements to serially count incidences of at least one of the events (column 3, lines 56-63). Gover also discloses that the monitoring operation steps are

controlled by a control element comprising a monitor mode control register and further that the counting elements each comprise a performance monitor counter (column 3, lines 6-17).

Gover also discloses determining a previous (i.e. historical) frequency of occurrence of incidences of the events to be counted (column 4, lines 7-17 and 35-40) and assigning the available counters to the events to be counted based upon the determined previous frequency (column 4, lines 40-44).

Gover also discloses carrying out the monitoring method in a system using a computer program, with corresponding instructions in a computer readable software medium (column 2, lines 11-15).

Gover also discloses that when the number of events to be counted is less than the number of counting elements available to count incidences of the events, distributing the number of available counting elements across the number of events to be counted to employ serial counting (column 2, lines 11-25 and column 4, lines 55-67).

As noted above, the invention of Gover teaches many of the features of the claimed invention and while the invention of Gover does teach that when the number of events to be counted is less than the number of counting elements available to count incidences of the events, distributing the number of available counting elements across the number of events to be counted to employ serial counting and while it would have been obvious to one having ordinary skill in the art to perform a

conventional division operation in order to distribute the number of available counting events, Gover does not explicitly disclose such a division step.

Dharap teaches a data list transmutation and input mapping system including means for distributing a number of table entries across the number of available entries by dividing the number of table entries by the number of available entries, in a first assigning step, assigning a number of table entries, said number equal to the integer resulting from said dividing step, to each of the number of available entries and, in a second assignment step, assigning any unassigned table entries to at least one of said available entries (0025-0026).

It would have been obvious to one having ordinary skill in the art to modify the invention of Gover to explicitly disclose a division step, as taught by Dharap, because Dharap suggests a method pertinent to the particular problem of distributing items that would have provided means for correctly, accurately, and evenly assigning the counters to events of Gover (0025-0026).

(10) Response to Argument

Appellant first argues that the Examiner has not met the two-part Deminski Test which:

“requires that (1) a determination be made as to whether the reference is within the field of the inventor’s endeavor, and (2), assuming the reference is outside that field, a determination be made as to whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. In the present circumstances, neither test is met; thus, the references are not analogous art that can be combined to determine patentability of the claims... Clearly, Dharap is not within the field of the inventor’s endeavor herein. The subject invention is directed to the field of performance monitoring within a data processing system. Recognizing

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that interrupts could not be used during initial hardware testing of a processor in the data processing system, or when the processor was executing time-sensitive code, the inventor herein developed a novel process for increasing the available width of PMCs during the initial hardware testing of the processor or when the processor is executing time-sensitive code that cannot be interrupted.

Dharap has nothing to do with processor design, performance monitoring, or extending the width of PMCs in a processor. The endeavor of Dharap is to enable the display of data on a small screen in a manner that is easy for a user of the small screen to use. This is clearly outside the field of endeavor of the inventor of the present invention."

The Examiner agrees that the invention of Dharap is reasonably outside the field of the inventor's endeavor and therefore we must determine whether the reference is reasonably pertinent to the particular problem with which the inventor was concerned.

Appellant then argues:

"Since Dharap lies outside the field of the applicants' endeavor, the issue becomes whether the reference is reasonably pertinent to the particular problem with which the inventor was concerned. As noted above, the claimed invention is aimed at solving problems associated with the fact that interrupts could not be used during initial hardware testing of a processor in a data processing system, or when the processor was executing time-sensitive code. The applicant identified this problem and solved it by utilizing the present claimed structure.

A reference related to [a] displaying data on the small screen of a cellular telephone has no reasonable pertinence to solving the problem of an inability to use interrupts in certain situations involving hardware testing of a processor or the execution of time-sensitive code, problems that are solved by the present invention. One skilled in the art would not look to cellular telephone displays to solve such problems,

Furthermore, there is no reasonable basis for one skilled in the art attempting to solve 'interrupt problem' to turn to display screens of small hand-held devices in an attempt to solve such a problem. Display screens have nothing to do with interrupts; they merely display data that is useful to a user of the display screen.

Therefore, since Dharap is not reasonably pertinent to the interrupt problem, it is not analogous art according to the pertinent case law and MPEP 2141.01(a).

Accordingly, the Dharap reference should be removed from [sic] consideration herein and the claims allowed."

The Examiner first asserts that the invention as claimed does not include any "interrupt problem" to be solved. Instead, the claimed invention only includes limitations for solving a problem of dividing a number of counting elements with respect to the number of events to be counted. For example, claim 1 requires:

"assigning at least two of said counting elements to serially count incidences of at least one of said events, wherein when the number of events to be counted is less than the number of counting elements available to count incidences of said events, said assigning step comprising at least the steps of: dividing the number of available counting elements by the number of events to be counted; in a first assignment step, assigning a number of counting elements, said number equal to the integer resulting from said dividing step, to each of said events to be counted; and in a second assignment step, assigning any unassigned counting elements to at least one of said events."

This claim limitation does not refer to interrupts, but is instead a method for solving a problem of assignment by performing division. This particular problem is the same as the problem described on page 7, lines 14-21 of the instant specification, which states:

"Figure 3 is a flowchart illustrating an example of steps performed to allocate PMC's in accordance with a first embodiment of the invention in which the PMC's are divided evenly among the events being monitored. When the number of PMC's and number of events being monitored cannot be divided evenly, one or more of the PMC's will have less than others. Referring to Figure 3, at step 302, the number of events being monitored is determined. At step 304, the number of PMC'S available for monitoring is determined, and at step 306, the number of PMC's available is divided by the number of events to determine the grouping of the PMC's (step 308)."

Therefore, the particular problem in which the Appellant is concerned, with respect to the claimed limitations, is not an "interrupt problem" but is instead the problem of performing division and/or item distribution.

The invention of Dharap is also concerned with the problem of division/item distribution and teaches that "[d]epending on the maximum number of available entries required on the list (nine in the case of an Internet-enabled cellular phone), the list may be granularized by dividing the total number of table entries by the number of available entries, and an abbreviated list 104 arranged for display as a WAP page on a cellular phone. In list 104, because only eight slots are available (one slot, entry 1, is used for a command to "show the list"), twenty-six divides by eight three times with a remainder of two, meaning that at most entries (six), three table letters can be assigned, while two of the entries must be assigned four letters."

As can be seen, the instant invention is concerned with the problem of evenly dividing a number of counting elements with respect to the number of events to be counted and the invention of Dharap is concerned with the problem of evenly dividing a number of entries with respect to the number of available slots, and therefore both are reasonably concerned with the problem of performing division and/or item distribution, as disclosed by Appellant in the instant specification.

Appellant further argues:

"As noted above, the present invention is directed to a particular method, system, and computer program product for calculating the division of plural PMCs among events being monitored by the PMCs. U.S. Patent No. 5,557,548 to Gover et al. ('Gover') teaches a method and system which monitors specified events among the number of events within a data processing system. An MMCR allows control over which PMCs are used to monitor which events, and this control enables the ability of

certain of the PMCs to be used for overflow of other PMCs. Applicant acknowledges that the present invention utilizes the control concept taught by Gover. However, the present invention improves upon the functionality of Gover by enabling the MMCR to calculate the optimal division of the PMCs among the events being monitored, when there are fewer events than PMCs. This division calculation is explicitly claimed in all of the independent claims, and thus is also claimed in all of the dependent claims...

Dharap merely teaches that the display of data on a small display screen can be modified in a useable way to display less than the total of the data desired to be displayed, when needed. Since neither Dharap nor Gover teach or suggest these claimed elements, it is submitted that the present invention patentably defines over Gover and Dharap, both alone and in combination. Accordingly, each of the independent claims, and all claims depending therefrom, patentably define over Gover and Dharap and are in condition for allowance."

The Examiner maintains that the invention of Gover does teach that when the number of events to be counted is less than the number of counting elements available to count incidences of the events, distributing the number of available counting elements across the number of events to be counted to employ serial counting. Specifically, Gover discloses the particular embodiment using four counting elements (i.e. PMC's) (Figure 4) and discloses that "[w]hen the maximum number of occurrences of selected events is anticipated to be less than 2^{16} , a user may configure the performance monitor to monitor up to four events within the data processing system. However, if the number of anticipated event occurrences would cause a single PMC to overflow, a user may configure the performance monitor to count up to 2^{64} occurrences without overflow." (column 4, lines 57-64)

As can be seen by the cited section, the invention of Gover discloses that when the number of occurrences of selected events is anticipated to be less than 2^{16} , a method is performed for evenly assigning each of the four counting elements (i.e.

PMC's) to four separate events to be counted. Gover also discloses that when the number of anticipated event occurrences would cause a single PMC to overflow, a method is performed for evenly assigning each of the four counting elements to the same event to be counted.

Therefore, the invention of Gover does teach evenly assigning the counting elements to the events to be counted and while the Examiner maintains that it would have been obvious to one having ordinary skill in the art to perform a conventional division operation in order to distribute the number of available counting events, Gover does not explicitly disclose such a division step.

The invention of Dharap then teaches the claimed steps of division, specifically, "dividing the total number of table entries by the number of available entries...because only eight slots are available (one slot, entry 1, is used for a command to "show the list"), twenty-six divides by eight three times with a remainder of two, meaning that at most entries (six), three table letters can be assigned, while two of the entries must be assigned four letters."

As evident from the cited prior art, the combination of Gover and Dharap does teach the claimed limitations of "dividing the number of available counting elements by the number of events to be counted, in a first assignment step, assigning a number of counting elements, said number equal to the integer resulting from said dividing step, to each of said events to be counted, and in a second assignment step, assigning any unassigned counting elements to at least one of said events" through the combination of Gover's teaching of evenly dividing and assigning a

number of counting elements with respect to the number of events to be counted with Dharap's explicit teaching of division.

Further, motivation to make such a combination exists since Gover does teach evenly assigning the counting elements to the events to be counted and Dharap suggests a method pertinent to the particular problem of distributing items that would have provided means for correctly, accurately, and evenly assigning the counters to events of Gover (Dharap; 0025-0026).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the Examiner in the Related Appeals and Interferences section of this Examiner's Answer.

For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

jrw

Conferees:

Darren Schuberg 

Marc S. Hoff 


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800